Name:_____ Date:_____

Algebra 2/Trig: Writing the Equation of a Circle

A] **The Equation of a Circle (Center-Radius Form)** $(x-a)^2+(y-b)^2=r^2$

1) The circle $(x-3)^2+(y-4)^2=25$ has center _____, and radius _____.

2) The circle $(x-7)^2+(y-8)^2=64$ has center _____, and radius _____.

3) The circle $(x+6)^2+(y+8)^2=100$ has center _____, and radius _____.

4) The circle $(x-5.3)^2+(y+4.1)^2=10$ has center _____, and radius _____.

5) Write an equation of the circle whose center is (7, -8) and whose radius is 5.

6) Write an equation of the circle whose center is (-9, 14) and whose radius is 13.

7) Write an equation of the circle whose center is (14, 0) and whose radius is *r*.

8) Write an equation of the circle whose center is (-3, 4), and passes through the point (6, -1).

9) Write an equation of the circle whose center is (5, -9), and passes through the point (-2, 3).

B] **The Equation of a Circle (Standard Form)** $x^2 + y^2 + Cx + Dy + E = 0$

10) Re-write $x^2 + y^2 - 6x + 8y + 4 = 0$ in **center-radius** form. State the **center**, and **radius**.

11) Re-write $x^2 + y^2 + 8x + 10y + 20 = 0$ in **center-radius** form. State the **center**, and **radius**.

12) Re-write $x^2 + y^2 - 2x - 2y - 7 = 0$ in **center-radius** form. State the **center**, and **radius**.

13) Re-write $2x^2+2y^2+20x-10y-64=0$ in **center-radius** form. State the **center**, and **radius**.

14) Re-write $x^2+y^2-4x-6y+8=0$ in **center-radius** form. State the **center**, and **radius**.

15) Re-write $x^2+y^2+2x-4y+1=0$ in **center-radius** form. State the **center**, and **radius**.

16) Re-write $x^2 + y^2 + 6x - 6y + 6 = 0$ in **center-radius** form. State the **center**, and **radius**.

17) Re-write $x^2 + y^2 - 6x + 2y - 6 = 0$ in **center-radius** form. State the **center**, and **radius**.

18) Re-write $x^2 + y^2 - 8y = 0$ in **center-radius** form. State the **center**, and **radius**.

19) Re-write $(x-3)^2 + (y-4)^2 = 13$ in **standard form**.